ACC.11
60th Annual Scientific Session & Expo

E1586
JACC April 5, 2011
Volume 57, Issue 15

VASCULAR DISEASE

NON-DIPPING STATUS IS ACCOMPANIED BY HYPOADIPONECTINEMIA AND INCREASED AORTIC STIFFNESS IN ESSENTIAL HYPERTENSION

ACC Poster Contributions
Ernest N. Morial Convention Center, Hall F
Tuesday, April 05, 2011, 9:30 a.m.-10:45 a.m.

Session Title: Vascular Stiffness and Carotid Imaging
Abstract Category: 8. Vascular Biology/Atherosclerosis/Thrombosis/Endothelium
Session-Poster Board Number: 1144-90

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Background: Absence of nocturnal blood pressure (BP) fall is related to adverse cardiovascular outcomes, while adiponectin is emerging as a marker of atherosclerosis progression. We investigated whether non-dipping status is associated with plasma concentrations of adiponectin and arterial stiffness in essential hypertensive subjects.

Methods: 148 newly diagnosed untreated non-diabetic patients with essential hypertension [98 men, mean age=49 years, office BP=150/97 mmHg] underwent 24-h ambulatory BP monitoring and were classified as dippers and non-dippers according to the diurnal variation of >10% between mean daytime and nighttime systolic and diastolic BP. Carotid to femoral pulse wave velocity (PWV) was measured with the Complior SP. Lipid profile and adiponectin levels were assessed from venous blood samples.

Results: Non-dippers (n=38) compared to dippers (n=110) were older (55±7 vs 49±9 years, $p<0.0001$), and had higher left ventricular mass index (119±12 vs 101±18 g/m2, $p<0.05$). In the total population, plasma adiponectin levels were negatively related with BMI ($r=-0.168$, $p<0.05$), waist to hip ratio, ($r=-0.421$, $p<0.0001$), office systolic BP ($r=-0.285$, $p<0.0001$), 24-h systolic BP ($r=-0.194$, $p<0.05$), total cholesterol ($r=-0.220$, $p<0.005$), and PWV ($r=-0.280$, $p<0.001$), while it was positively associated with systolic BP fall ($r=0.520$, $p<0.001$). Additionally, PWV was associated with BMI ($r=0.233$, $p<0.05$), 24-h systolic BP ($r=0.327$, $p<0.0001$) and negatively related to systolic BP fall ($r=-0.17$, $p<0.05$). Non-dippers compared to dippers exhibited attenuated adiponectin values (7.9±3.6 vs 9.7±4.4 μg/ml, $p<0.05$), and higher PWV values (8.6±1.2 vs 7.7±4.2 m/sec, $p<0.05$), while the two groups did not differ regarding metabolic profile (p=NS). Analysis of covariance revealed that adiponectin and PWV values remained significantly different between groups after adjustment for confounders ($p<0.05$).

Conclusions: Non-dipper hypertensives are characterized by a more pronounced activation of proatherogenic mechanisms, as reflected by low levels of adiponectin, and arterial stiffness, thus indicating the increased cardiovascular risk associated with non-dipping status.